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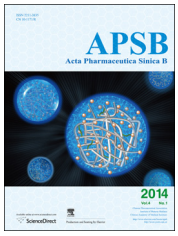
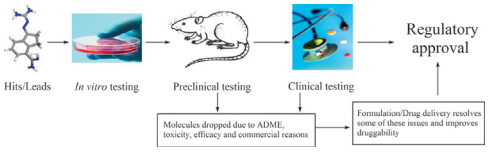
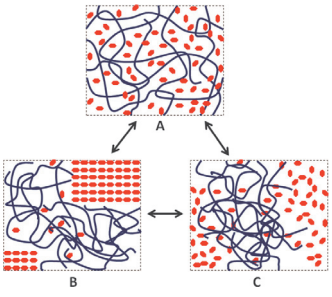


Graphical Abstracts/Acta Pharmaceutica Sinica B, 4 (2014) iii–vi

Review Articles





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Bio-mimetic drug delivery systems designed to help the senior population reconstruct melatonin plasma profiles similar to those of the healthy younger population

Ying Li[a,b], Liuyi Wang[c], Li Wu[b,d], Xueju Zhang[b], Xue Li[b], Zhen Guo[b], Haiyan Li[b], Peter York[b], Shuangying Gui[a], Jiwen Zhang[a,b,d]

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[b]*Center for Drug Delivery Systems, Shanghai Institute of Materia Medica, Chinese Academy of Sciences, Shanghai 201203, China*
[c]*Hainan Weikang Pharmaceutical (Qianshan) Co., Ltd, Anqing 246000, China*
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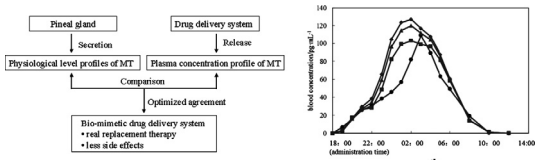

A bio-mimetic drug delivery system learns after the nature to mimic the physiological circadian rhythm of endogenous substance *via* optimizing exogenous substance release profile to give a pharmacokinetically real replacement therapy with reduced side effects.

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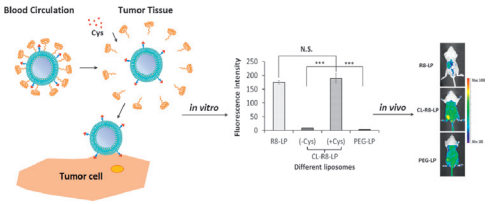
A detachable coating of cholesterol-anchored PEG improves tumor targeting of cell-penetrating peptide-modified liposomes

Jie Tang, Li Zhang, Han Fu, Qifang Kuang, Huile Gao, Zhirong Zhang, Qin He

Key Laboratory of Drug Targeting and Drug Delivery Systems, Ministry of Education, West China School of Pharmacy, Sichuan University, Chengdu 610041, China



A cholesterol anchored reduction-sensitive PEG was applied here to help R8 modified liposomes achieve tumor targeted delivery *in vivo*. The combination of reduction-sensitive PEG and CPPs could overcome *in vivo* "kinetic barriers" and the cytoplasmic membrane barrier under the control of Cys.This new liposome formulation improves the non-specificity of CPPs and enhances the tumor targeted drug delivery of CPP-modified carriers.

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Comparative pharmacokinetics of tetramethylpyrazine phosphate in rat plasma and extracellular fluid of brain after intranasal, intragastric and intravenous administration

Dongmei Meng[a,b], Haoyang Lu[a], Shanshan Huang[b], Minyan Wei[a], Pingtian Ding[c], Xianglin Xiao[b], Yuehong Xu[a], Chuanbin Wu[a]

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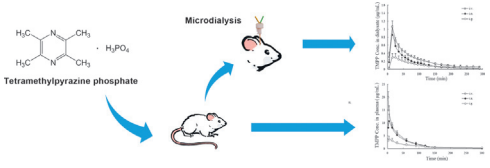
[b]*The First Affiliated Hospital of Guangzhou Medical College, Guangzhou 510120, China*
[c]*School of Pharmacy, Shenyang Pharmaceutical University, Shenyang, 110016, China*



Pharmacokinetic analysis of tetramethylpyrazine phosphate (TMPP) in plasma and extracellular fluid in cerebral cortex of rats after intranasal, intragastric and intravenous administration was carried out with microdialysis sampling and HPLC-UV analysis. The results indicated that TMPP was rapidly absorbed from the nasal mucosa into the systemic circulation and then across the blood–brain barrier to reach the cerebral cortex. Intranasal administration of TMPP may be a promising alternative to intravenous and oral approaches.

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An aerosol formulation of *R*-salbutamol sulfate for pulmonary inhalation

Xuemei Zhang[a], Qing Liu[a], Junhua Hu[a], Ling Xu[b], Wen Tan[a]

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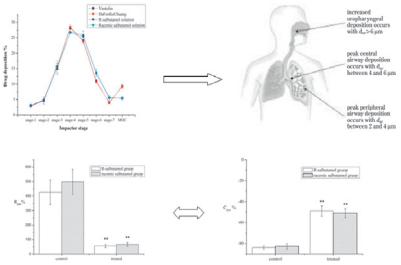
[b]*Key-Pharma BiomedicalInc., Dongguan 523000, China*



Drug particles will deposit in different stages of NGI which simulate the lower respiratory tract structure approximately. Also alleviation of airway hyperreactivity by inhaling *R*-salbutamol sulfate solution was validated both in airway resistance and dynamic compliance of lung in comparison of racemic salbutamol.

Short Communication